

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A low vision viewing apparatus that displays an image of an object, said apparatus comprising:

a camera, including a lens to define an image plane and an electronic image sensor located at the image plane for capturing a visual field providing an output set of pixels representative of said visual field depending on input as to specific pixels or ranges thereof;

a display means configured to provide a representation of a window of interest;

an electronic processing means controlled by a program, connected intermediate of said display means and said camera, which defines said visual field as a set of pixels and a subset of said set of pixels as said window-of-interest; and

a steering means to select said subset of pixels on said visual field which constitutes the window-of-interest,

wherein said processing means selectively acquiring said subset of said set of pixels from said camera depending on user input from said steering means and pre-programmed instructions.

2. (Original) A low vision viewing apparatus according to claim 1 wherein:

said electronic processing means includes storage means; and

said electronic processing means controlled by said program that causes said processing means to apply digital magnification to said stored set of pixels to a desired magnification level selected by said low-vision user, said electronic processing means displaying a magnified image of said visual field image on said display means.

3. (Original) A low vision viewing apparatus according to claim 2 wherein said electronic image sensor is a high-resolution image sensor that captures a high-resolution image.

4. (Currently amended) A low vision viewing apparatus according to claim 1 ~~either of claims 1 or 2~~ wherein said electronic image sensor is a low-resolution image sensor that captures a plurality of low-resolution images by moving a low-resolution image sensor by sub-pixel amounts and combining said low-resolution images to create a high-resolution image.

5. (Currently amended) A low vision viewing apparatus according to claim 1 ~~either of claims 1 or 2~~ wherein said electronic image sensor consists of a plurality of low-resolution image sensors that are optically "butted" together to create a single high-resolution image sensor and captures a high-resolution image.

6. (Currently amended) A low vision viewing apparatus according to claim 1 ~~either of claims 1 or 2~~ wherein said electronic image sensor is a low-resolution image sensor that is moved within said image plane of said lens to capture a plurality of low-resolution images, and combining said low-resolution images to create a high-resolution image.

7. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 6~~ wherein said electronic processing means moves said window-of-interest on said electronic image sensor by reading said subset of pixels from said electronic image sensor and displaying said window-of-interest on said display means.

8. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 6~~ wherein said electronic processing means moves said electronic image sensor within said image plane of said lens and displays said window-of-interest on said display means.

9. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 6~~ wherein said electronic processing means moves said electronic image sensor within said image plane of said lens and displays said high resolution image on said display means.

10. (Currently amended) A low vision viewing apparatus according to claim 7 ~~any one of claims 7 to 9~~ wherein said low-vision user controls the location of said window-of-interest or said electronic image sensor by a device selected from the group consisting of a trackball, a joystick, a set of buttons, a mouse, a touch screen, or a touch tablet.

11. (Currently amended) A low vision viewing apparatus according to claim 1 ~~any one of claims 1 to 10~~ wherein said electronic processing means subsamples said window-of-interest by reading said subset of pixels as defined by a previously defined regular pattern and displays a compressed image on said display means.

12. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 6 or 9~~ wherein said electronic processing means subsamples said high-resolution image by reading said set of pixels as defined by a previously defined regular pattern and displays said compressed image on said display means.

13. (Original) A low vision viewing apparatus according to claim 12 wherein said program controls said processing means to apply digital magnification to said high-resolution compressed image to a desired magnification level selected by said low-vision user and displays the digitally magnified image on said display means.

14. (Currently amended) A low vision viewing apparatus according to claim 7 ~~any one of claims 7, 8 or 10~~ wherein said program controls said processing means to apply digital magnification to said window-of-interest to a desired magnification level selected by said low-vision user and displays the digitally magnified image on said display means.

15. (Original) A low vision viewing apparatus according to claim 11 wherein said program controls said processing means to apply digital magnification to window-of-interest compressed image to a desired magnification level selected by said low-vision user and displays the digitally magnified image on said display means.

16. (Currently amended) A low vision viewing apparatus according to claim 12 ~~either of claims 12 or 13~~ wherein said program controls said processing means to select said high-resolution compressed image based on said desired level of magnification selected by said low-vision user, and displays selected image on said display means.

17. (Currently amended) A low vision viewing apparatus according to claim 7 ~~any one of claims 7, 8, 10 or 14~~ wherein said program controls said processing means to select said window-of-interest based on said desired level of magnification selected by said low-vision user, and displays selected image on said display means.

18. (Currently amended) A low vision viewing apparatus according to claim 11 ~~either of claims 11 or 15~~ wherein said program controls said processing means to select said window-of-interest compressed image based on said desired level of magnification selected by said low-vision user, and displays selected image on said display means.

19 (Currently amended) A low vision viewing apparatus according to claim 13 ~~any one of claims 13 to 18~~ wherein said program controls said processing means to select said desired magnification level for each letter so that text in said visual field and said window-of-interest is magnified to a preselected size on said display means.

20. (Currently amended) A low vision viewing apparatus according to claim 13 ~~any one of claims 13 to 18~~ wherein said program controls said processing means to select said desired magnification level for each letter so that the text in said visual field and said window-of-interest is reduced to a preselected size on said display means.

21. (Currently amended) A low vision viewing apparatus according to claim 13 ~~any one of claims 13 to 15~~ wherein said digital magnification is implemented using two dimensional scaling by a form of interpolation selected from the group consisting of linear interpolation, nearest-neighbour interpolation, or cubic spline interpolation.

22. (Currently amended) A low vision viewing apparatus according to claim 12 ~~any one of claims 12, 13 or 16~~ wherein said program controls said processing means to automatically adjust the brightness and contrast of said high-resolution compressed image on said display means.

23. (Currently amended) A low vision viewing apparatus according to claim 7 ~~either of claims 7, 8, 10, 14 or 17~~ wherein said program controls said processing means to automatically adjust the brightness and contrast of said window-of-interest on said display means.

24. (Currently amended) A low vision viewing apparatus according to claim 11 ~~any one of claims 11, 15 or 18~~ wherein said program controls said processing means to automatically adjust the brightness and contrast of said window-of-interest compressed image on said display.

25. (Currently amended) A low vision viewing apparatus according to claim 2 wherein said electronic processing and storage means successively adjusts the focus of said lens and captures an image at different focus points, ~~analyses~~ analyzes said different focused images to extract the image sections of each different focus image which are the sharpest, and combines said image sections to yield a high-resolution image with extended depth of focus.

26. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 7 or 9~~ wherein said program controls said processing means to implement pixel level binarisation on said stored high-resolution image based on a uniform pixel threshold level.

27. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 7 or 9~~ wherein said program controls said processing means to implement pixel level binarisation based on a pixel threshold level which varies over said high-resolution image to provide optimum binarisation in the presence of brightness variations.

28. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 6~~ wherein said program controls said processing means to use page segmentation

to identify the location of letters and a reading order for said letters in said stored high-resolution text and display said letters on said display means in a predefined pattern.

29. (Original) A low vision viewing apparatus according to claim 28 wherein said program controls said processing means to arrange said letters into words and displays said words on said display means in a predetermined sequence wherein each said word replaces the previous said word after a predetermined time period.

30. (Original) A low vision viewing apparatus according to claim 28 wherein said program controls said processing means to arrange words on said display means in a predetermined sequence, wherein said words are displayed from one side of said display means to the opposite side of said display means.

31. (Currently amended) A low vision viewing apparatus according to claim 28 ~~any one of claims 28 to 30~~ wherein said program controls said processing means to separate said letters by displaying said letters with a predetermined space between each said letter.

32. (Currently amended) A low vision viewing apparatus according to claim 28 ~~any one of claims 28 to 31~~ wherein said program uses a device to determine the section of said stored high-resolution image text displayed on said display means by a device from the group consisting of a trackball, a joystick, a set of buttons, a mouse, a touch screen, or a touch tablet.

33. (Currently amended) A low vision viewing apparatus according to claim 3 ~~any one of claims 3 to 6~~ wherein said program automatically moves through said stored high-resolution image text, said movement based on said reading order of said text on said display means.

34. (Original) A low vision viewing apparatus that magnifies and displays an image of an object on a display means, said apparatus incorporating a controller for electronically processing said image, said electronic processing modes including:

- a live video capture and image display of said magnified image; and
- a static image capture and image display of said magnified image.

35. (Original) A low vision viewing apparatus according to claim 34 wherein said static image capture mode allows a user to adjust the magnification of said static image on said display means.

36. (Currently amended) A low vision viewing apparatus according to claim 34 ~~either of claims 34 or 35~~ wherein said static image capture mode allows the user to navigate said static image on said display means.

37. (Currently amended) A low vision viewing apparatus according to claim 34 ~~any one of claims 34 to 36~~ wherein said static image capture mode ~~analyses~~ analyzes text present in said static image and provides for the display of said text on said display means in a plurality of predetermined formats.

38. (Currently amended) A low vision viewing apparatus according to claim 34 ~~any one of claims 34 to 37~~ wherein said static image capture mode ~~analyses~~ analyzes the reading order of said text, and facilitates the user to navigate around said static image on said display means by using a controller to determine the section of said static image to be displayed on said display means.

39. (Currently amended) A low vision viewing apparatus according to claim 34 ~~any one of claims 34 to 38~~ wherein said static image capture mode ~~analyses~~ analyzes the reading order of said text and allows automatic movement of the section of said static image visible on said display means, using a controller to determine the speed and direction of said automatic movement.

40. (Cancelled)